REMARKS

Claims 1-15 remain pending in the application. Claims 1 and 15 have been amended.

The Abstract of the disclosure stand objected to because the Abstract should be on a single sheet and does not require the title of the disclosure to be present therein.

Applicants have now amended the Abstract to correct the stated objection but have kept the title of the application in view of the comments made by the Examiner on is telephone conversation with the undersigned of December 14, 2005.

Applicants note with appreciation the allowance of Claims 13 and 14.

Claims 1-2, 5-7, 10 and 15 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Cheng (U.S.P. 5,798,936)

Applicants respectfully traverse the above rejection for the following reasons:

The "look-ahead" operation taught by Cheng's is limited to only estimating a congestion value at the current stage. Cheng does teach nor does suggest to actually "look-ahead". As shown in Cheng's Figure 1, the steps that perform the look-ahead operation consist in "estimate congestion, balance resources and adjust densities". Furthermore, the look-ahead congestion estimation "comprises the steps of saving the current locations of all cells, uniformly distributing the cells in each region according to their x,y coordinates, and finding the pin bounding box partitioning (PBB) for all the nets" (Col 4. lines 44-48) Therefore, the "look-ahead congestion estimation" taught by Cheng is limited to estimating congestion based on the "current" placement alone.

In contradistinction, Applicants teach "looking-ahead" by actually performing forward cuts, estimating the congestion or timing, and then returning back to the current cut. Thus, the estimation of the congestion/timing taught by the Applicants is based on the placement achieved by "future" cuts relative to the "current" cut. It, therefore, follows that the teaching of the Applicants is unrelated to the look "ahead" operation taught by Chang.

Applicants' teaching has far reaching implications and consequences which are not taught nor suggested and which cannot be achieved by the operation taught by Cheng since Applicants' teaching is far more comprehensive than the "look-ahead" operation taught by Cheng, since it establishes a paradigm for optimizing the placement that allows any generic cost function/directive generation technique to be incorporated therein. This is because accurate placement information is important for a generic cost function/directive generation. By successive partitioning, it becomes possible to provide far more accurate placement information for future cuts (look-ahead) than the one provided by a simple "uniform distributing the cells". Notwithstanding, in order to further differentiate Applicants' teaching from Cheng's, Applicants have now amended independent Claims 1 and 15 to recite:

"a) subdividing the plurality of cells into partitions by performing a sequence of cuts;

FIS9-2003-0335-US1   6

b) estimating a future placement by performing additional cuts based on a result of the current cut"

Accordingly, Applicants submit that claims 1 and 15 as amended and all the claims depending thereof are believed to be free of rejection under 35 U.S.C § 102(b) over Cheng, and respectfully request that the Examiner reconsider and withdraw the rejection of the stated claims based thereon.

Claim 6 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Cheng (USP 5,798,936) in view of Dangelo (USP 6,324,678).

As explained previously, independent claims 1 and 15 have been amended to specifically include an estimation of the congestion/timing based on the placement achieved by "future" cuts relative to the "current" cut. This is not taught by Cheng. Now, when the teaching of Cheng is combined with Dangelo's, the resultant teaching includes determining the timing cost in a partitioned design, where the partitioning lacks the novel features of the Applicants.

Accordingly, Applicants believe that Claim 6 is patentable over Cheng in view of Dangelo, and respectfully request that the rejection of Claim 6 based on 35 U.S.C. §103(a) be reconsidered and withdrawn.

In view of the foregoing, it is respectfully requested that all the outstanding objections and rejections to this application be reconsidered and withdrawn and that the Examiner pass all pending claims to issue.

Should the Examiner have any suggestions pertinent to the allowance of this application, the Examiner is encouraged to contact Applicants' undersigned representative.

Respectfully submitted,
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